Approved By J. B. Stanley	Vogtle Electric Generating Plant	18013-C 7.2
Date Approved 3/24/09	RAPID POWER REDUCTION	Page Number 1 of 11

ABNORMAL OPERATING PROCEDURE
CONTINUOUS USE

PURPOSE

This procedure provides instructions when plant conditions require a rapid load reduction or plant shutdown in a controlled manner in the judgment of the SS.

Entry	Condition	Target	Approx. Time @ 3-5%/min
17015-D05 17015-E01	MFPT High Vibrations	**<70% RTP**	6-10 minutes
17019-B04 18025-C	Condenser Low Vacuum *or* Circ Water Pump Trip *or* Loss of Utility Water	**Vacuum >22.42" Hg** and STABLE or RISING	
18009-C	SG Tube Leak (≥**75 gpd** with an **ROC ≥30 gpd/hr)**	**<50% RTP** within 1 hour	10-17 minutes
18009-C	SG Tube Leak (≥**5 gpm)**	**20% RTP** within 1 hour & trip reactor	16-27 minutes
18039-C	Confirmed Loose Part	**20% RTP** quickly	16-27 minutes
	SS determination based on plant conditions	As determined by the SS	

MAJOR ACTIONS

- Perform Pre-job Brief.
- Perform rapid power reduction.

CONTINUOUS ACTIONS

Step	Actions
__ 6	– Monitor plant conditions warranting a turbine load rate greater than 5%/min for tripping the reactor and going to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.
__ 7	– Maintain Tavg within 6°F of Tref.
__ 8	– Maintain reactor power and turbine power matched.
__ 9	– Maintain PRZR Pressure at 2235 psig.
__ 10	– Maintain PRZR Level at program.
__ 11	– Maintain SG level between 60% and 70%.
__ 14	– Monitor Steam Dumps operation for C-7 reset.
__ 16	– Monitor for adequate load reduction or that plant conditions no longer require shutdown, to stabilize power level.

SHUTDOWN BRIEFING

METHOD

- Auto rod control should be used.
- Reduce Turbine Load at approximately **3%** RTP per minute (approx 36 MW_e) up to **5%** RTP (approx 60 MW_e).
- Borate considering the calculations from the reactivity briefing sheet and BEACON.
- Maintain AFD within the doghouse.
- SS (or SRO designee) - Maintain supervisory oversight.
- All rod withdrawals will be approved by the SS.
- Approval for each reactivity manipulation is not necessary as long as manipulations are made within the boundaries established in this briefing (i.e. turbine load adjustment up to 60 MW_e, etc.).
- A crew update should be performed at approximately every 100 MW_e power change.
- If manpower is available, peer checks should be used for all reactivity changes.

OPERATIONAL LIMITS

- Maintain T_{AVG} within ±6°F of T_{REF}. **If T_{AVG}/T_{REF} mismatch >6°F and *not* trending toward a matched condition or if T_{AVG} ≤551°F, then trip the reactor.**
- *If load reduction due to a loss of vacuum*, every effort should be made to maintain the steam dumps closed (Permissive C-9 ≥24.92" Hg).

INDUSTRY OE

- Shift supervision must maintain **effective oversight** and exercise **conservative decision making**.
- Correction of significant RCS T_{AVG} deviations should only be via secondary plant control manipulations and not primary plant control manipulations (i.e., do not withdraw control rods or dilute).

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
__1. Perform SHUTDOWN BRIEFING.	
__2. Verify rods in AUTO.	
__3. Reduce Turbine Load at the desired rate up to 5%/min (60 MWE/min).	
__4. Borate as necessary by initiating 13009, CVCS REACTOR MAKEUP CONTROL SYSTEM.	
__5. Initiate the Continuous Actions Page.	
__*6. **Check desired ramp rate - LESS THAN OR EQUAL TO 5%/MIN.**	*6. IF conditions warrant a turbine load rate greater than 5%/min, THEN perform the following: __a. Trip the reactor. __b. Go to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.
*7. **Maintain Tavg within 6°F of Tref:**	
__a. Monitor Tavg/Tref deviation (UT-0495).	
__b. Verify rods inserting as required.	__b. Manual rod control should be used with insertions of up to 5 steps at a time.
__c. Energize Pressurizer back-up heaters as necessary.	

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
*8. **Maintain reactor power and turbine power – MATCHED.**	
__a. Balance reactor power with secondary power reduction using boration and control rods.	
__b. Check rate of reactor power reduction - ADEQUATE FOR PLANT CONDITIONS.	b. Perform the following: __1) Trip the reactor. __2) Go to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.
__c. Check RCS Tavg - GREATER THAN 551°F (TS 3.4.2).	c. Perform the following: __1) Trip the reactor. __2) Go to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.
__d. Check RCS Tavg - WITHIN 6°F OF TREF.	d. IF Tavg/Tref mismatch can NOT be maintained less than 6°F, THEN perform the following: __1) Trip the reactor. __2) Go to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.
__*9. **Maintain PRZR Pressure - AT 2235 PSIG.**	
__*10. **Maintain PRZR Level - AT PROGRAM.**	

ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED

__*11. **Maintain SG Level – BETWEEN 60% AND 70%.**

__12. Notify the System Operator that a load reduction is in progress.

13. Notify SM to make the following notifications as appropriate:

__Plant Management Notifications using 10000-C, CONDUCT OF OPERATIONS.

__NMP-EP-110, EMERGENCY CLASSIFICATION DETERMINATION AND INITIAL ACTION.

__00152, FEDERAL AND STATE REPORTING REQUIREMENTS.

__Chemistry Technical Specification sampling for load reductions greater than 15% using 35110-C, CHEMISTRY CONTROL OF THE REACTOR COOLANT SYSTEM.

__QC to perform a NOPT inspection using 84008, RPV ALLOY 600 MATERIAL INSPECTIONS AND REPORTS for reactor shutdowns.

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

Attempts should be made to keep steam dumps closed if power reduction is required for Condenser problem.

__*14. **Check steam dumps – CLOSED.**	*14. Perform the following: __a. Reduce Tavg using control rods and/or boration. __b. WHEN steam dumps are closed, THEN reset C-7.
__15. Check Turb/Gen to remain online.	__15. Go to Step 18.
*16. **Check desired plant conditions achieved:** __Adequate load reduction. -OR- __Plant conditions no longer require shutdown.	__16. WHEN desired plant conditions are achieved, THEN Go to Step 17.

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
17. Perform the following: __a. Stabilize power level. __b. Place rods in MANUAL and match Tavg with Tref. __c. Maintain stable plant conditions. __d. Go to 12004-C, POWER OPERATION (MODE 1) Section 4.2 and perform actions from the starting power level to ending power level.	
__18. Check reactor power level - LESS THAN OR EQUAL TO 20%.	__18. Return to Step 3.
__19. Stop the heater drain pumps.	
20. Check if desired to maintain reactor critical at 20% power. __a. Stabilize power level. __b. Place rods in MANUAL and match Tavg with Tref. __c. Maintain stable plant conditions.	20. Perform the following: __1) Trip the reactor. __2) Go to 19000-C, E-0 REACTOR TRIP OR SAFETY INJECTION.

ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED

21. Remove one main feedwater pump from service by performing the following:

__a. Place selected MFPT speed controller in MAN:

MFPT-A: SIC-509B
MFPT-B: SIC-509C

__b. Slowly lower selected MFPT speed until remaining MFP assumes load:

- Selected MFP discharge pressure - LESS THAN REMAINING MFP DISCHARGE PRESSURE.

-AND-

- SG steam flow/feed flow – MATCHED.

__c. Open selected MFPT drains:

MFPT A	MFPT B
HV-3105	HV-3106
HV-3107	HV-3108
HV-3117	HV-3118
HV-3121	HV-3122
HV-3119	HV-3120

Step 21 continued on next page

ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
__d. Trip selected MFPT: MFPT-A - HS-3169 MFPT-B - HS-3170	
22. Transfer steam dumps to STEAM PRESSURE mode:	
__a. Place STEAM DUMP CONTROL PIC-507 in MAN.	
__b. Check no demand on PIC-507.	__b. Match Tavg with Tref using rods or boration/dilution.
__c. Place STEAM DUMP CONTROL MODE SELECT HS-500C in STM PRESS.	
d. Control Tavg for current reactor power level:	
__ Manual control. -OR- __ Place PIC-507 in AUTO at desired setpoint.	
__23. Transfer steam load to steam dumps while holding reactor power stable and lowering turbine load.	
__24. Trip turbine when load has been reduced to 5% (61 MW).	
__25. Go to 12004-C, POWER OPERATION (MODE 1).	

END OF PROCEDURE TEXT

REFERENCES / COMMENTS

Commitment / Comment

1994328863

Step 17 12004-C Section 4.2 is referenced. If that section is re-sequenced, then this step will need to be modified.

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